

M-BLEM BULBS BECOME HOLIDAY ORNAMENTS, MEMENTOS

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Cultural Diversities
with Georges M. Ngonyani

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Campus benefactor: Edward L. Berthoud

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Peace Corps volunteers speak on opportunities

Tim Weillert
Content Manager

"Ask not what America can do for you; but what together we can do for the freedom of man." John F. Kennedy's famous words spoken during his 1961 inauguration were more than just statements. During his time as president, Kennedy made a lasting contribution to global humanitarian causes by establishing the Peace Corps. Currently, the Peace Corps employs over 6000 volunteers in 70 countries in a variety of fields. David Frossard and his wife Ginny Lee, who are both AC&N employees, served in the Peace Corps and held an information session last week.

"They're really looking for engineers, people to teach science and math, and build water projects," said Frossard as he began the presentation. Following a few initial questions, a short film was shown. The history of the Peace Corps, key events and people, and

inspirational stories threaded their way through the video.

Frossard then explained the three goals of the Peace Corps. "Supplying trained people to a host country is goal one," said Frossard, "but the other two goals are cultural. Goal number two is that Americans will go out into the world, get a passport, and live in a village, with people, learn their language and get to understand how other people live in the world. The other part of this goal is to show people in other countries what Americans are really like. The third goal is to bring it back and tell other Americans about what you found."

Throughout the presentation, Frossard and Lee fielded several questions. Topics ranged from the application process to training. On the topic of signing up, Frossard said, "Apply about a year before you want to go. If you're a senior this year, apply now. You might be heading out to eastern Europe or

Tanzania or any number of places about September next year." When asked about the type of work and training required for a trip, Frossard replied, "If you're an engineer then you probably know science and math pretty well, and that goes a long way. For instance, our specialty is freshwater fisheries. We got about 300 hours of training in freshwater aquaculture; it's like getting a bachelor's degree in fish farming without the social sciences."

Graduate school opportunities were also discussed. "If you are a successfully returned Peace Corps volunteer, you are eligible for the rest of your life for fellowships from a number of participating universities. In the best case scenario, you can get a free ride to do a graduate degree, master's degree, or Ph.D. At the very least, there is some kind of tuition reimbursement," said Frossard. He also described another program wherein volunteers could use their Peace Corps experience as field

work for a thesis.

Frossard and Lee ended the presentation with a slide show accompanied by their own stories. The presentation definitely show-

cased an option that most Mines students might simply overlook: travelling abroad for humanitarian purposes.

PHOTO COURTESY DAVID FROSSARD



Peace Corps volunteer Ginny Lee teaches a sewing workshop in the rural Zambian village of Kifuwe. Projects such as this one are suggested by villagers themselves to meet their own perceived needs.

Space explorer's lecture

Dr. Joseph Tanner, astronaut, speaks at Mines

Robby Gill
Staff Writer

While the public interest in space has waned since the formation of NASA, there is still plenty of data to obtain up there. Thus, astronauts are still making runs up to space to see what can be learned.

The Center for Space Resources (CSR) at the Colorado School of Mines (CSM) focuses on educating students about past and current research in the space industry. Tying into this goal, as part of the 2008 Space Explorers Lecture, Professor Joseph Tanner, astronaut, came to CSM to share his experiences on the International Space Station. Dr. Tanner is a veteran of four space flights. He has logged 1000 hours in space and 50 hours in extra-vehicular activity (EVA).

His lecture was intended for all audiences, since he just gave an overview of what it is like to be in space. He even commented on how the most common question he gets is: "how do you get a bathroom in space?"

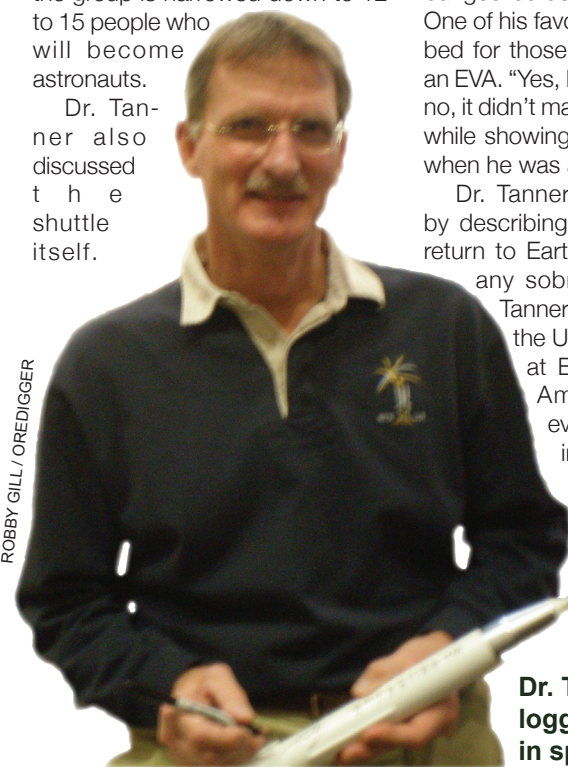
Dr. Tanner first discussed how one is selected to be an astronaut. "We primarily hire astronauts to fly onto the space station," said Dr. Tanner, referring to how most of the people who go up into space are only there for a few days. Currently, NASA is conducting a review process to see who they want to go up into space over the last few shuttle missions.

The decision process begins with a significant amount of applications. This pile is narrowed down to 3800 hopefuls who are qualified to go into space. A few elimination sessions later and the group is further narrowed to 120 applicants. "Everyone will most likely have at least a Masters," said Dr. Tanner.

These applicants are interviewed through many elimination rounds. As the application process continues, the interviews and tests become more invasive. Eventually, the group is narrowed down to 12 to 15 people who will become astronauts.

Dr. Tanner also discussed the shuttle itself.

ROBBY GILL / OREDIGGER



"The shuttle is a magnificent piece of machinery," said Dr. Tanner, "but it does have a few major flaws." One of these flaws is the heat shield in the front. If this system fails, then the entire shuttle will fail on reentry. The astronauts take care to examine the foam around the shuttle while in space.

One of the frequent subjects in the lecture was on how objects are kept from floating away. Dr. Tanner showed some of the systems used to anchor supplies, including bungee cords and suction tubes. One of his favorite devices was the bed for those not about to go on an EVA. "Yes, I'm upside down and no, it didn't matter," said Dr. Tanner, while showing a picture of himself when he was asleep.

Dr. Tanner ended the lecture by describing what it was like to return to Earth. "You would flunk any sobriety test," said Dr. Tanner. He now teaches at the University of Colorado at Boulder. However, if American astronauts ever get into trouble out in space, he is more than ready to go up there and assist in any way he can.

Dr. Tanner has logged 1000 hours in space.

Undergraduate council votes on new grading system

Jake Rezac
Content Manager

Last Wednesday, the Undergraduate Council held their monthly meeting to discuss a number of issues related to undergraduate students at Mines. Among these issues was the implementation of a plus/minus grading system, beginning next year.

In the 2008-2009 Undergraduate Bulletin, it is specified that grades of A, B, C, D, and F be given. These correspond to GPA weights of 4.0 to 0.00, respectively, and are used to determine a number of things, ranging from graduation awards to cut-offs for academic suspension and probation. The Undergraduate Council overwhelmingly voted to change this, allowing the inclusion of pluses and minuses. This would change the GPA distribution so that, for example, a B+ would be worth 3.300 points, a B would be worth 3.00 points and a B- would be worth 2.700 points.

Although this, at first, seems to be a drastic change from current policy, a number of stipulations are associated with the change. For example, "It is not a requirement for the faculty to use the plus/minus system," according to the council. The change

merely represents a change in "The symbols of the grades that exist." Furthermore, because this is an administrative change, the Faculty Senate must also approve this at their next meeting. Finally, according to the council, "Anyone who is following a different Bulletin [than the one with the new changes] falls under" the new grading system too.

The council also talked about "CSM's capacity to administer common exams." According to math professor Gus Greival, "At this point in time, our ability to hold exams given the space and timing, our capacity is exceeded." He further added, "We can no longer... provide exams which are adequately proctored... we have 300 students taking exams in rooms which fit 300 people." Suggestions regarding this problem included not having common exams, introducing higher flexibility in when and where exams could occur, and looking at technological approaches. The council was asked to look further into the issue, and it took no action.

The Council also discussed the inclusion of a new Computer Science course, Web Development II, but voted to take no action until further details are made available.

Scientific discoveries this week

USA/Ohio: Homo-erectus species were brainy. Fossils studied by a group of scientists led by anthropologist Scott Simpson from the Case Western University concluded that homo-erectus were born with big brains. The fossil of a nearly complete female pelvis, which was unearthed around 2003 in Ethiopia, is wider than previously believed, which means that infants were born with a 30% larger heads than formerly thought.

Germany/Berlin: An American patient who has been living with AIDS for over a decade was recently diagnosed with leukemia. After undergoing a bone marrow transplant treatment—to treat his blood cancer—his AIDS symptoms seem to have been cured. The doctors have retested the patient several times, and all the results were negative. A more extensive study has begun to understand why and how the disease was cured.

Spain: Long live the mice! A group of scientists have been able to increase the life span of mice by about 26% using the enzyme telomerase. This enzyme helps the cells to continue dividing and growing. However, several lab mice developed cancerous cells and eventually severe tumors. The scientists have been using antitumor genes along with the enzyme with promising results.

USA/California: Scientists have discovered that mushroom can generate vitamin D when exposed to sunlight, much like the human skin. The report indicates that since more people are spending their time indoors, vitamin D developed by the skin is not enough. Still, to acquire enough daily amount of vitamin D, scientists say that one needs to not only depend on mushroom, but also on getting exposed more to the sun.

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ASSOCIATED
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Headlines from around the world

Emily Trudell, Staff Writer

Thomas Beadie, the world's first **pregnant man**, who was born female and legally became a man after hormone treatments, reported that he is pregnant again.

Anti-Vietnam activist **William Ayers**, who has been a figure of discussion throughout the presidential election, stated that he has no connection to President-Elect Barack Obama.

A bush fire in **Santa Barbara County** in California has burned over 2,500 acres and destroyed over 150 homes in an area that contains the homes of celebrities such as Oprah Winfrey and Rob Lowe.

Ann E. Dunwoody, age 55, earned her fourth star after 33 years in the Army, becoming the first woman in the United States military to become a **four star general**.

Michel Lapointe, a 430 pound criminal known as **"Big Mike"** was released from prison early do to the inability of the prison system in Quebec, Canada, to properly accommodate for his obesity.

Josef Fritzl has been charged with murder, rape, and slavery after he allegedly **imprisoned** his daughter for 24 years, and did not take his infant son to a doctor when gravely ill, causing the child's death.

The **Supreme Court of Connecticut** gave homosexual couples the **right to wed** in a 4-3 vote, giving them the choice to choose marriage over the civil unions that were approved in 2005.

A study conducted by H. Lee

as the lander stopped sending information back to **NASA** over a week ago.

Law enforcement offices across the nation are seeing a rise in threats toward President-Elect **Barack Obama**, though the Secret Service refused to comment on the number of threats they have received or are investigating.

Three boys from Chicago's North Lawndale College Prep, who were on a leadership camping trip, **drowned** when they snuck away from chaperones and attempted

to paddle in boats with floor plugs that had been removed for the wintertime.

The space shuttle **Endeavour** docked with the International Space Station after performing a full backflip to diagnose whether any damage had been done to the shuttle.

Jon Kyl, the second ranking Republican senator, has said that President-elect **Barack Obama** would be making a good choice if he made Senator Hillary Clinton his Secretary of State.



Improving spatial prediction

Jake Rezac
Content Manager

According to Mines’ math professor Reinhard Furrer, the process of prediction is to “Estimate a quantity of interest at an arbitrary location” in order to “Fill in missing data.” Furrer described this process in his lecture last Friday entitled “The Golden Guide to Spatial Prediction” in which he presented “Tools for modeling and analyzing huge spatial data sets,” a field which he has been researching for a number of years.

Furrer describes spatial data sets as sets which “Have clear ordering – x and y.” He has been working with these types of data sets since before he received his Ph.D. “Another student who was in spatial statistics” was working under his Ph.D mentor, and after awhile, he “Started working with spatial statistics.” However, it was only after he began his post-doctoral work at the National Center for Atmospheric Research (NCAR) that he started to work with the huge data sets – ranging from 6,000 points to over 800,000 points – he works with now.

In order to work with spatial data sets, Furrer has worked with and developed three methods – “Tapering, backfitting, and aggcokriging.” Each of these is “Essentially... solving a linear system.” In order to solve these systems, Furrer often uses a process known as the “Best Linear Unbiased Predictor” (BLUP), or Kriging Predictor, which uses observations of data to predict nearby values.

This method has been extended by Furrer to work with the systems of huge data sets he often encounters. Basing his work on the Kriging Predictor, Furrer has written a package for the statistical software R called spam – “An R package for sparse

matrix algebra.” The goal of this package, according to Furrer, is for it to be “Versatile, intuitive, and simple.” Spam is a very efficient method of calculation, according to Furrer. It takes a computer with about 1 gigabyte of RAM only 50 minutes to perform these methods on huge data sets. Furrer calls this method tapering.

A second method Furrer uses is called backfitting. He described it in terms a device used by biostatisticians which collects 400,000 data points per device. The biostatisticians “Filter the data, then clean it” in a many-step process, before they can process it. Furrer “Wanted to see how far [he] could push” his methodology, and process the data in one step. Backfitting tries to “Solve a least-squares problem that we can’t solve.” There are, however, problems with backfitting – for example, the data points must be independent of each other, something which is not always the case.

The final method Furrer is working on is called Aggregation Cokriging. In this method, rather than using each variable equally, a weighted average is used. He uses this because “Very often we cannot use tapering... or we cannot handle the amount of data.” This method is “Not hard, but just a little bit nasty.”

Furrer is developing aggcokriging in coordination with the Engineering Department. Together, they are attempting to find a way to make the use of construction rollers and the flattening of Earth more efficient. It is a perfect example of “Spatial data with many observations.” Furrer hopes to have developed his methods sufficiently to solve the problem soon. However, for now, he is still working. “Give me another year... maybe we’ll have a solution [then].”

Champion Buy One Get One Sale at Bookstore

(November 2008) – The temperatures may be cooling down, but sales are just warming up at the CSM Book Store. Between November 9 and November 30, you can buy any regular price Champion item and get a second (of equal or lesser value) at 50% off.

All men’s, women’s, and even children’s Champion apparel is included in the sale. It’s a great opportunity to get an early jump on holiday shopping – right on campus. The bookstore offers a variety of Champion items bearing the school name and logo. Make sure your friends and family show their school pride from top to bottom.

CSM Book Store is located at 1600 Maple St Ben Parker Student Center It’s open 8-5 Monday through Thursday, 8-4 on Friday and 10-2 Saturday!

Demands in India and China impact Colorado

Sophie Hancock
Staff Writer

The bullish progress of China’s economy and India’s economy has been monitored for some years, and their combined resource demand and what it means for Colorado was revisited during this weeks’ Van Tuyl lecture given by Dr. Vince Matthews.

Matthews is the Director and State Geologist for the Colorado Geological Survey (CGS), but has a long resume of private sector and University lectureships. He began by introducing the CGS and their range of responsibilities, which include avalanche awareness, education, water resource management, and promotion of energy and mineral reserves in the state.

China’s GDP is now growing at more than 10% per year and India is achieving growth rates of 7-9%. Both are drastically increasing their use of natural resources. Although China has large resources of its own, they are insufficient to meet domestic demand for many key minerals. China, during the last five years and despite large domestic production, has become a net importer for many materials. These include copper, iron ore for steel manufacture, coal and other energy minerals, cement, and a range of base metals.

The world’s mineral and energy resource production capacities are being strained to supply these exponentially growing economies. The price of nearly every natural resource commodity has dramatically escalated since 2003, although the last month has seen volatility in pricing related to other macroeconomic activity.

ing related to other macroeconomic activity.

Not only have prices of certain commodities increased, but the competition to obtain these natural resources has become intense. Colorado is already suffering from a shortage of several mineral commodities, including cement, petroleum, and precious metals. As world commodities such as oil reach their peak ability to produce and begin to decline, the consumer deficits need to be addressed. Matthews also remarked that since China had such a high consumption rate of many materials, it resulted in a large proportion of the global shipping fleet being tied up in contracts to meet that demand.

Colorado is and will continue to be, significantly affected by the global resources boom, as its producers are part of globalized marketplaces. Colorado’s mineral and energy industry produced \$12.2 billion in revenue in 2005 and \$11.6 billion in 2006, so the state is capitalizing on current material demands but may also become dependent on these revenues.

One risk of Colorado being so naturally endowed in resources is the increased pressure to produce this mineral and energy wealth, especially for minerals in short supply, which are critical minerals to the

US economy. As a whole, prices will continue to escalate, and have the potential to result in increasing land use conflicts locally and regionally. Production can be increased by leasing new mines, increasing shifts, and through production efficiency improvements.

Throughout the presentation, Matthews drew on his commercial experience of resource companies: oil and gas corporations, and in coal, lime, and limestone. Matthews added some cautionary notes related to the lack of awareness of foreign ownership of many mineral and extractive industries within the US and the reliance on technology advances to solve high consumption demand issues. Given the increasing global competition for seemingly fewer economic resources, Coloradans must be cognizant of the mineral market’s vulnerability to increasing inflationary pressures, and even at high spot prices, the potential for products to be inaccessible on the open market.

To learn more, interested readers should refer to both the “BP Statistical Review of World Energy 2008,” and to the US government report “Minerals, Critical Minerals, and the US Economy” of which Colorado School of Mines’ faculty Dr. Murray Hitzman chaired and contributed.

Article Correction: Uranium Industry: Past, Present and Future, Issue 6, page 3
Sophie Hancock, Staff Writer
76% not 96% of the global uranium supply is mined at the top twelve mine locations.
These and other economic factors are driving the search for uranium and have resulted in significant Uranium price increases, peaking at \$135 per pound in the summer of 2007. This price rise is reported in terms of chemical U3O8 equivalent (U3O8e), not uranium 308 as stated.

Dr. Michl visits CSM chemists

Tim Weilert
Content Manager

Prior to his guest lecture last Friday, Dr. Josef Michl joined the Mines chapter of the American Chemical Society for a casual luncheon. During this time he connected with chemistry students and answered various questions.

Michl, who now works as a professor at the University of Colorado, shared about some of his recent projects. Solar cells were one area of research Dr. Michl covered. “There is a process known as singlet fission... where you end up with two excited states when you only started with one photon,” said Michl, “Given the distribution of solar flux at the surface of the earth, with this scheme you could improve efficiency by a factor of 1.5. Industrial chemists might work for three years and improve the efficiency of their cells from 8.0% to 8.5%, so a factor of 1.5 would be a big deal.”

Refraction indices were another of Dr. Michl’s projects. “We have an effort trying to make a material that would have a negative index of refraction. You are familiar with what happens with materials that have indexes of refraction greater than one,” said Michl. “If one could make a material with a negative refraction index; I think it would not be an exaggeration to call it a ‘revolution in optics.’ Such materials already exist, but only for the

microwave and infrared regions, but if one could be made for UV or visible regions, that would be something.” Applications of this research could impact electronics and induction.

Pure science was a topic Michl brought up throughout the talk. Even with his research on solar cells, he said, “There will not be any singlet fission solar cells on the shelves of supermarkets next year, but it is worth evaluating.”

He also remarked on the difference between pure science and engineering. “If you do a project, perhaps a research proposal, where you say ‘I will make A, then B, to C, etc.’ If you’re doing pure science it’s different than engineering. If you get the money to do the project and everything works exactly as you proposed, I would say that is a failure because you have not learned anything new. You already apparently knew how things are, but as an engineer if you build a bridge and it works as

it is supposed to, it’s better than a bridge that collapses,” said Michl, “In pure science you want to look for the unexpected because that’s where discoveries come from. Today we have no clue which of our discoveries will be important, so looking for the unexpected is extremely important.”

Michl also offered advice for undergraduate students. “If something is worth doing, it is worth doing right. From my own experience, the number of subjects where I thought ‘I have to take this course, but I will never use it, it is a waste of time’ later turned out to be critical. That number is legion,” said Michl, “The more knowledge you can soak up, the better. Think of yourself as a sponge; absorb as much knowledge as you can. Develop your imagination: creativity and imagination are just as important as facts, but without those facts the imagination has no basis. I would also advise that they do undergraduate research.”

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One big party:

International Day

Sophie Hancock
Staff Writer

Each year during the fall, the international students of the Colorado School of Mines (CSM) host a double International Day event, unrivaled in the region. International Day is an afternoon and evening cultural experience not to be overlooked, being the largest event put on by international students at CSM. This year's event is taking place on Saturday November 22 in the Green Center.

Firstly, during the early evening from 4-6:30 PM, there is enthusiastic sampling of around thirty international cuisines from every continent. A selection of the countries represented at the Food Event on International Day for 2008 are:

Holland
Thailand
Japan
Saudi Arabia
Malaysia
Bangladesh
Republic of Korea
Turkey
Iceland
Peru
Libya
UK
Trinidad and Tobago
National Society of Black Engineers (NSBE)

Also look out for the I-Day T shirts which will be on sale all week in the Student Center.

Tokens will be sold at the door of the event for \$0.50 each, with many dishes being available to try for one or two tokens. The opportunity to try so many exotic foods,

some of which are created from personally imported ingredients, or items sought out at specialist supermarkets from across the Denver area, is unsurpassed.

It is little wonder that queuing up with the students are many people from the local Golden and Denver communities, eager to get a taste of as many of the goodies as possible. As campus is opened up through the medium of I-Day, CSM has a great chance to showcase its diverse community and use this opportunity to develop relations with the community in Golden and further afield.

Having been involved behind the scenes, I can testify to all the hard work in planning and executing recipes and to preparing the Green Center to be fit for the imminent banquet. Once the crowds have been fed and the tables cleared away, International Day's focus shifts to the evening cultural show including music, dance, and cultural shows from about ten different countries.

A surprise program of cultural activities will be shown in the Bunker Auditorium to entertain the crowds after all the eating has finished. The cultural show is a free event and has become an integral part of the CSM annual events calendar. We look forward to welcoming you next Saturday to the Green Center!



SOPHIE HANCOCK / OREDIGGER

Stirred but not shaken

Ben Makuh
Staff Writer

Last Thursday, at 5:00 AM in southern California, over five million people were shaken as a magnitude 7.8 earthquake ripped through more 186 miles of the San Andreas Fault. Fortunately, this earthquake was fake.

Coordinated by the USGS, the California Office of Emergency Services, the California Seismic Safety Commission, and various other bodies, The Great Southern California Shakeout was the biggest earthquake drill in US history and was designed to test the preparedness of individuals and emergency responders in the event of a very large quake. Modeled by geologists and physicists in computer simulations, the Shakeout had an epicenter on Bombay Beach and showed intense shaking along the San Andreas Fault all the way up to Lake Hughes, which is northwest of Palmdale. The model also estimated 1,800 fatalities, 50,000 injuries, and \$200 billion in damages, with a final fault slip of the San Andreas between 6-23 feet.

I had the opportunity to interview Vince Matthews, Colorado's State Geologist, about the Shakeout, its importance, and its implications. The USGS predicts another major earthquake will occur in California in the next 30 years, and Shakeout is just one step in acclimating people to the reality of earthquake preparedness. "When you see a sign that says, 'Drop, cover, and hold,' what does that mean? Have I ever tried just doing that? If you know what 'Drop, cover, and hold'

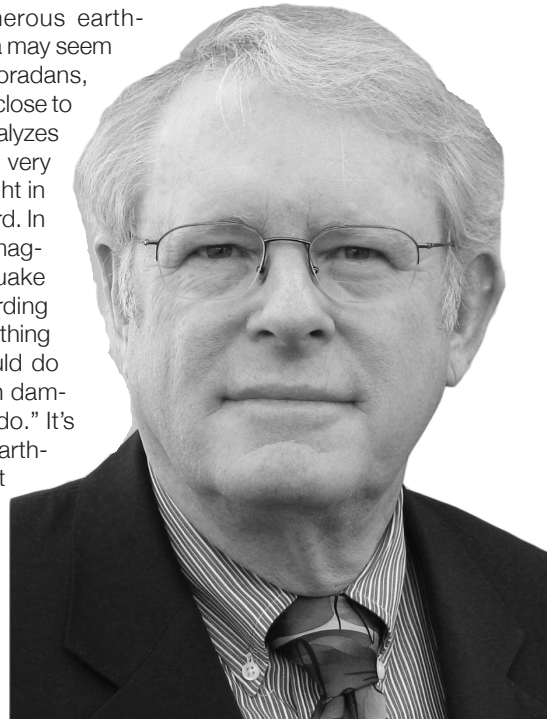
means, and you've practiced it, you're much more likely to do it instinctively when the earthquake starts," said Matthews.

"Certainly southern California is going to have a major earthquake on the San Andreas Fault, no question about that," Matthews continued. Shakeout was also significant in helping emergency responders know what to expect. The simulation included such elements as destroyed hospitals and bridges. This necessitates the development of contingency plans. "As an old boy scout with the motto, 'Be prepared,' I'm all for that," said Matthews.

While the numerous earthquakes in California may seem far-off to many Coloradans, the whole idea hits close to home when one analyzes the potential for a very bad earthquake right in Colorado's backyard. In fact, there was a magnitude 6.6 earthquake in 1882 and, according to Matthews, something similar today "Would do about \$14 billion in damage here in Colorado." It's the attitude that earthquakes are not that big of a hazard here that really scares Matthews. "An earthquake in Colorado really has the potential to be Colorado's Katrina."

An EPICS project a few years ago did a

survey of home inspectors across the front range about whether or not they enforced the few earthquake building codes we have, and they found that 80% did not, for various reasons. "There's this [under-appreciation for] what could happen," said Matthews. "It's more important, perhaps, for us to do [a Shakeout drill] here than it is for them, because we don't have the building codes to withstand a strong earthquake and we don't have a clue where one is liable to hit." It may be wise for Colorado to take a hint from California and "Be prepared."



BEN MAKUH / OREDIGGER

Vince Matthews. Colorado's state geologist warns Coloradans to "be prepared"

Power apparatus failure

Robby Gill
Staff Writer

As energy demands increase around the world, many new organizations are being formed to address all aspects of this issue, such as the Electric Power Research Institute (EPRI) at the Colorado School of Mines.

EPRI is a non-profit organization focused on developing new materials to withstand the forces that are experienced in a power generation apparatus.

"The majority of cases where failure occurs, defects predominate in the vicinity of weldments," said Dr. Bilal Dogan, senior project manager for EPRI and speaker for Thursday's Materials and Metallurgical department seminar. EPRI addresses three elements of the materials to examine this problem: processing, properties, and structural integrity. One of their greatest concerns is fracture.

"Fracture is a mode of failure," said Dr. Dogan. He focused his presentation on a fracture phenomenon called creep fatigue. Creep fatigue occurs when a material is exposed to high temperatures over long periods of time.

"There isn't a test procedure for creep fatigue," said Dr. Dogan. Creep is hard to test because of the time factor; if a fracture occurs over a short period of time, then it is categorized as a failure other than creep. EPRI is still searching for a material that is resilient to creep.

"The choice of materials, both base and weld, with design performance relevant properties is critical in establishing the technical feasibility of the plant concept," said Dr. Dogan. One kind of material that was commonly used in energy generation is a carbon compound called P91. The compound was used primarily for replacing and welding used parts.

"We found out that it was not a

good [replacement] later on," said Dr. Dogan. In their studies of the compound, EPRI discovered many new ways to prevent an issue. For instance, they found that "adjacent strong material can constrain deformation and retard failure in a weak zone." This is not what EPRI was expecting to see occur in the material.

"This peculiar behavior highlights the uncertainties in applying uniaxial data to plant," said Dr. Dogan. Another problem is that laying adjacent strong material against thick weak zones may act like a stress concentration. As Dr. Dogan puts it, this leads many developers to always question, "How safe is my structure?"

As research continues into this phenomenon, many professional organizations are developing similar codes to regulate fracture testing. EPRI and these groups continue to provide data for materials research in energy generation fields.

M-blem holiday ornaments

Tyler Benton
Guest Columnist

In October, the cherished "M" of the Colorado School of Mines changed from incandescent light bulbs to new energy efficient LEDs. The event commemorated the 100-year anniversary of the "M," which was first built in 1908. Rather than dispose of the old incandescent bulbs in a landfill, Blue Key National Honor Society has decided to make

holiday ornaments. This allows everyone the opportunity to take a piece of the "M" home. The ornaments have been engraved with one of two designs. These designs are engraved on light bulbs straight from the "M," many of which are faded from the sun, and come in clear, blue, red, and green. The bulbs sell for \$5, and the proceeds benefit Energy Outreach Colorado and the CSM Blue Key National Honor Society. Energy Outreach

Colorado is a non-profit which helps Colorado's neediest provide long-term solutions control their energy use and lower their bills. The bulbs will be on sale in the student center Nov. 21 and 23, and Dec. 1-4 from noon to 2pm. Orders can also be made by contacting Kim See at ksee@mines.edu.



STUDENTS

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Club Spotlight: Astronomy Club

Greg Davies
Staff Writer

Since the beginning of human history, the study of the stars has has interested thinkers of every generation. The Colorado School of Mines (CSM) Astronomy Club follows in this tradition by encouraging the student body to study the heavens. The Astronomy Club meets at Meyer Hall every other Wednesday night at eight, and after the meeting, "if the night sky is clear, the club will usually go out to Kafadar Commons to point out common constellations with the aid of green lasers and the astronomy club telescope," according to Walter Unglaub, the club's vice-president.

According to Unglaub, at meetings, the Astronomy Club "Give[s] presentations regarding some aspect of astronomy, be it constellations, the mythology behind them, stars, astronomical anomalies, cosmology, or the basic physics behind some of the more common

phenomena in the heavens." On top of meetings, the Astronomy Club is involved in numerous events such as "Trips to the Denver Museum of Nature and Science, Fiske Planetarium in Boulder, and the Chamberlain observatory in Denver." Also, there is at least one star party a semester, which involves "Camping out in the mountains, away from the light pollution from Golden and Denver, and stargazing with a variety of telescopes for the majority of the night."

The general goal of the Astronomy club, says Unglaub, is to "Spark the interest of as many Mines students as possible in the fields of astronomy and astrophysics." He continued, saying, "We'd love for new students, of all levels of experience in the field of astronomy, to contribute any and all their ideas as to how we can better improve the club." The club's long-term goal is to get funding for Mines to have its own observatory or planetarium, with help from the Denver Astronomical Society.

For those students interested in astronomy, the easiest way to get involved in the club is to go to the Wednesday meetings and participate in club events, including trips and star parties. The astronomy club is also one of the few campus organizations with a website under the "CSM Groups" tab on Trailhead. According to Unglaub, joining the Trailhead group will give anyone interested access to "The club calendar, photos, and links to awesome astronomy websites and references, among other goodies. The website is constantly being updated, and by requesting to join the e-mail list, you can receive updates and notifications on upcoming events and meetings held by the Astronomy Club." Club meetings occur every other Wednesday in Meyer Hall Room 373 at eight in the evening. More information can be obtained by contacting club president Andy Ahern at aahern@mines.edu or vice president Walter Unglaub at wunglaub@mines.edu.

Spotlight: Climbing Wall

Spencer Nelson
Staff Writer

"I like that the rock climbing wall is really accessible to students. It's right there and it's open," said Matt Bolt, a senior Environmental Engineer, about the rock climbing wall at the Student Recreation Center. Jenny Mack, a junior Chemical Engineer, loves the climbing wall because "it's a great workout." "There's a lot of nice people there," said Mike Johnson, a junior Physics major. Serving students six nights a week, the climbing wall provides a fun place for Mines students to participate in the joys of rock climbing.

Rock climbers of any skill level can refine their talents through several avenues. Bouldering offers climbers a chance to climb freely without ropes up to about ten feet. There are 30 bouldering routes set up with 10 in each skill level: recreational, intermediate, and advanced. "[They] have really good route setters. . . The guys that set the boulder problems are pretty good. It's ever-changing. It's always good quality," said Bolt, who climbs about two times a week.

Full sport routes are another feature of the climbing wall. These routes can all be climbed on top rope or on lead and range from around 5.7 to upwards of 5.11. These routes allow climbers to go from the ground level up to the top of the wall, a full two stories up. Climbing these routes increases endurance and leg strength. A short class and test on belay technique is required before climbers can tackle these routes.

Being indoors offers several advantages. "You can climb there when it's snowy outside and all your favorite rocks are frozen," said Cameron Frisby, a student worker at the climbing wall. Due to the shielding from the weather, the rock wall becomes a valuable tool for climbers in the winter. Also, the wall encourages people to take up climbing outdoors. "It develops skills to help you outside," Frisby said. "It serves as a funnel to get people outside."

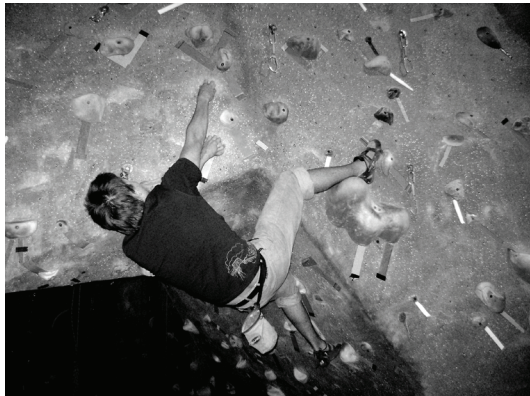
Bouldering competitions are held

every semester. They have been increasing in popularity and the climbing wall staff has continued to raise the standards, improving the event constantly. "This year with the competition, we are offering several workshops in addition to the ones we already teach," said Frisby. They plan on bringing in professional climbers to teach students more about technique. Another contest offered is a weekly pull-up competition. Students can come in any time during the week and do as many pull-ups on a pair of holds as possible. "If you come in and do the most pull-ups, you win a snazzy t-shirt," confirmed Frisby.

The list of resources the climbing wall offers is huge. Concerning education, the climbing wall offers offer classes through the Student Recreation Center on topics such as rappelling, lead climbing, anchor building, and route setting. Most of these classes are free and students are encouraged to take advantage of these opportunities.

One of the best features of the climbing wall is the price. "Our wall is free every day. We never charge to use the wall. That's a huge advantage for the students," said ORC director Rob Thompson. Frisby expounded on this theme: "It's cheap. If you don't have gear, you can rent gear for a dollar or two." Rock climbing shoes can be rented at the climbing wall for \$1 per night and chalk bags are rented out for free.

The climbing wall is open from 5:30 PM to 9:30 PM Monday through Thursday, 4:30 PM to 7:45 PM on Friday, and 5:30 PM to 7:30 PM on Sunday. All information about classes, competitions, and other events can be found at www.csm-recsports.com.



SPENCER NELSON / OREDIGGER

Ten Great iPhone Apps

They're either free or they're worth the money...

IAN LITTMAN, Tech Break Columnist

If you don't have and don't want the iPhone, this Tech Break isn't for you. However, if you do want to add fun and functionality to the hottest mobile platform out there (says the person using a Windows Mobile product as his day-to-day phone), check out these ten apps. The nice thing about iPhone apps is that you're buying a generally high-quality program for the price of an expensive cell phone game, not a piece of desktop software or a Nintendo DS game. Plus, there's a lot of good stuff out there for absolutely free. So go ahead, load up your iPod or iPhone... you'll be glad you did.

Communication\Entertainment

Sing, hum, type, say, or listen to a song, and **Midomi** will tell you what that song is. This app has earned high marks because its Song-ID-on-Steroids actually works... and works amazingly well. So, never be at a loss when it comes to naming that tune... this program is completely free. Get it at <http://tr.im/midomi>.

You've probably heard of the internet radio site **Pandora**, where you can pick out an artist or song and listen to an internet radio station based on not only that choice, but how you rate each successive song as it plays. The cool thing here is that Pandora is now available for the iPhone, so you can take your custom-built internet radio wherever you have cellular or WiFi service. It's available at <http://tr.im/pandoraphone>, for free.

IM+ Lite's function can probably be divined from its name: multi-platform IM with no per-message charges. The program, which supports AIM, ICQ, Yahoo, MSN, Jabber\GoogleTalk, and MySpaceIM works well and is absolutely free. Keep in mind, however, that due to Apple's strict developer agreement you can't run this app in the background...

so either you are IMing or you are not, there is no standby state. Grab it at <http://tr.im/impluslite>.

Games

Trism is best described as a combination between Tetris, Bejeweled, and pure awesomeness. Search for videos on YouTube and you'll be amazed at how fun this "Casual game" is. Built around the features of the iPhone (namely touch control and the accelerometer) from the ground up, this little beauty is worth every cent of the \$2.99 you'll have to shell out for it. It's at <http://tr.im/trism>

Like racing, but with an arcade-style twist? Then you'll like Gameloft's **Asphalt 4: Elite Racing**. High-end cars and part bonuses give this game a touch of realism, but acceleration controls (you can pick from three different layouts) and on-track power-ups give the game a definite arcade feel. If you want a little more realism, Need for Speed: Undercover will be out soon enough for the iPhone, but for now, Asphalt 4 is just the right mix of crazy and cool. The price: on sale at \$7.99. The location: <http://tr.im/asphalt4>.

X-Plane 9, for all the flight-sim fans out there, has now brought the gold standard of flight simulators to the iPhone. If you don't like flight simulation games, move right along, but if you do, this \$9.99 app can be had right now at <http://tr.im/xplane9>.

Utilities

Apple's own **Remote** app gives you control over either your iTunes or AppleTV of choice. Simple in theory, awesome in practice. Granted, the free app doesn't tend to justify shelling out \$229 or more for an iPod Touch, but being able to control your media to a fine-grained degree from anywhere on the same WiFi network as your media, well, it's definitely worth some dough. But again, this app is free at <http://tr.im/iphoneremote>.

One of the cool things about the iPhone is that it's touch-screened.

What's interesting is that someone thought that this touch screen would make a great computer touch pad. A few of those somebodies created **WinRemote** (for Windows), **Pad** (for Mac), and **iTap** (for both). The premise is simple enough: like Apple's Remote app, you need to be on the same WiFi network of the computer you're controlling. Unlike Remote, you're controlling the computer's mouse pointer, as opposed to the computer's iTunes library. WinRemote (<http://tr.im/winremote>) and Pad (<http://tr.im/iphonepad>) are \$1.99 each, iTap (<http://tr.im/itapiphone>) is \$3.99.

Want the ultimate level of control, via either VNC or RDP, for your computer, on your iPod Touch or iPhone? How about Telnet, or logging into an IBM mainframe? **MochaSoft** (<http://tr.im/mochasoft>) has you covered. For less-exotic protocols (read: VNC, RDP, and Telnet) their "regular" app versions are \$5.99. If you do not need a right-click button on your virtual mouse, or another extra feature or two, then get the free versions of these various clients. The remote desktop experience is a breeze when you're on WiFi, and I imagine it would be usable over 3G and maybe even EDGE. At any rate, for quick remote access work, it's nice to have a smart phone that'll do whatever protocol you need, quickly and easily. For SSH access, you'll want TouchTerm (free, <http://tr.im/touchterm>) or iSSH (\$4.99, <http://tr.im/isssh>).

Last but not least... **More Cowbell!** No, seriously, check it out...you gotta have more cowbell. <http://tr.im/cowbell>, Free

That is it. Check these apps out, and/or go online and comment on this article with your own favorite apps, whether they're for the iPhone, BlackBerry, Palm product or Windows Mobile phone.

Happy Birthday, Teresa!!

Geek of the Week

...Mike Ashwood, Sophomore: **Electrical Engineering, Computer Science**

Emily Trudell
Staff Writer

Do you consider yourself a geek?

You know I could get into a philosophical discussion about geekiness, it doesn't matter whether I define myself as a geek, only whether those around me consider me as a geek. So in my mind, NO.

What is the geekiest thing you've ever done?

I have left myself notes for my future self, and I can guarantee



at least three alarms on my cell phone that are set to go off in the next few years to remind me of things. Otherwise, I'm currently collecting computer monitors to make a giant TV screen someday. I also collect wires and cords... I do have a tradition of the room lighting ceremony.

Room Lighting Ceremony?

Christmas Lights. I have battery powered Christmas lights. I also have a Santa hat that I'll get out after Thanksgiving.

What clubs/extra-curricular activities are you involved in?

CSM Robotics Club, I'm the Music director at Mines Internet Radio, I am the treasurer of Kappa Kappa Psi (the band fraternity), I'm the Music Librarian for the music program.

So, you really like music?

I play the Alto Sax in the Pep Band and Tenor Sax in concert band. I also arrange music from time to time.

How about robotics? What can you tell me about that?

Next semester I'll be mentoring for FRC, First Robotics Competition for EPICS credit. I've also Emceed for the First Lego League competitions.

What do you enjoy in your downtime?

Downtime, what's downtime? I only stop for sleep...Umm, stan-

dard video games, and I program in my free time.

Favorite Movie / Music?

Oh my lord...favorite movie is the Back to the Future trilogy, I do enjoy time quandaries... I listen to classic rock and oldies, and anything in that genre, in general. I do like the Mines Barbershop Quartet, and a cappella groups as well.

One thing about Mines you love?

The classes may be hell, but I'm a sucker for knowledge.

One thing you want to see change?

What I want to see change? SLATE CAFÉ! Still not my favorite, even though I have a meal plan... and I'll probably have a meal plan next year, too.

How do you feel about the ratio?

I want to thank the freshman class for tipping it towards the women's favor (Even though it's not at all close to even).

Favorite class this semester?

C++, I'm a programmer at heart.

Any plans for the future?

In the long term, I see myself scattered across the universe or devoting my body to science. Short term, umm, internship next summer.

Any last words for all the ladies out there?

Ladies, I got the amps for your circuit.

Campus Benefactor: Edward L. Berthoud

Amanda Rock
Staff Writer

Anybody on campus would tell you Berthoud Hall is the home of the geology department. But could anybody tell you why the ornate building was christened Berthoud Hall? Probably Not. The truth is that Berthoud, like most buildings on campus, was named for a significant figure from Colorado School of Mines history. In this case, it was named after Captain Edward L. Berthoud, a founder of both the Colorado School of Mines and the town of Golden.

The hall itself was erected in the late 1930's as a Works Progress Administration (WPA) project that put to work unemployed Americans during the depression. In 1940, another Colorado School of Mines namesake, President Melville F. Coolbaugh, dedicated the building. Because the hall was constructed as a WPA project, it was as much a community project as it was a CSM project.

Captain Berthoud arrived in the area around 1860, back when Colorado was still a territory. He came to town as a surveyor, mainly surveying roadways and railways during the gold rush era. He was educated at a university in New York and was both a geologist and a civil engineer.

Captain Berthoud took an active interest in what would become Golden, Colorado, and was one of the original surveyors for the city. Berthoud earned the title of Colonel when he served in the Civil War cavalry and served as the Speaker of the House for Colorado during the five year period when Golden was the territory's capitol. Bethoud married Helen Ferrell, daughter of a prominent Golden citizen.

The Captain was the school's first registrar, when CSM was the state school for mining and students typically stayed for less than a year. Berthoud was a professor of both civil engineering and geology, making it appropriate to name the building that now houses today's geology and geological engineering department, after him.

Captain Berthoud was also responsible for finding the pass through the Rocky Mountains that bears his name. To honor this influential man in Colorado history, the state named a town after him: Berthoud, Colorado. Before his death in 1908, Berthoud donated his extensive book collection to the school, which is still available in the Arthur Lakes Library on campus.

So there you have it. CSM's own Berthoud Hall – named for a pioneer, a statesman, a soldier, and of course, an engineer!

Non-Geek of the Week

...Joshua Ribera, Senior: **Chemical Engineering**

Neelha Mudigonda
Staff Writer

Where are you from?

Commerce City, Colorado.

Why did you pick Mines?

I actually got a scholarship to go anywhere in-state, and I knew I liked math and science. Also, I kind of wanted a challenge, and it felt like Mines was a good place to do that.

What do you like about it so far?

I really like the people out here... a lot good people to meet. That's what I was kind of worried about before I came here, because you hear that there are a lot of nerdy people... caught up doing their own stuff. Definitely the professors here too. It's nice. Even up to the senior year, you wonder what all you have to do and learn as an engineer. They do a good job of teaching you all the applications.

What do you not like about it?

Sometimes, the work load can be pretty hard, especially if you take a lot of credits. Some of the profs... they forget that and give you homework in 4 or 5 other classes.

Was it a big transition coming from Commerce City to Mines?

Yeah, I'd say... definitely. Where I came from, at least at my high school, there weren't really a lot of kids who wanted to go to college; even the curriculum was made to push kids to graduate instead of getting them ready for class. Here, I feel like I'm kind of lazy compared to some of the people, but back at

home, I was always at the top of the class. Just coming here was a step up.

Since you're a senior now, has senioritis kicked in yet?

Yeah, mostly because you start to realize that you have a lot of responsibilities outside of school. Some of my friends are even getting engaged now; so, you realize you're getting older, and you start having to pay bills and work a little bit here and there. Even if you like all the classes you're in, you start to realize that homework is not as important when you're busy applying to grad school or a job...or just figuring things out.

Do you play any sports?

I like to play hockey...and football, basketball. But definitely hockey. I play here, at the school, too.

Do you play any instruments?

I play bass. I actually just bought myself a new one. I was really excited...kind of like an early birthday present. I played a little bit of drums too, but that was just trying it out. It's a good way to unwind.

Do you play in a band?

A couple of my friends in high school and I would get together and practice a lot, but we never made a band or anything. I didn't want it to be my focus.

Did you take lessons, or teach yourself?

No, I wasn't in band or anything like that in high school. When my brother left, I saw his bass laying around the house and picked it up and taught myself some songs. After

he sold it, I stopped, but I picked it up again on my own after coming here.

What kind of music do you listen to?

I listen to a lot of stuff, but I really focus on rock and hard rock and even metal, if you want to call it to. I also listen to a little bit of hip hop and the softer stuff.

Do you have favorite band?

I have a few, I guess. I really like Incubus. They're kind of the softer side, but I've listened to them forever and even saw them a couple of times. Tool and the Perfect Circle. Those are probably my favorites.

Did you do anything for Halloween?

Yeah, we had a little party at our place. I expected 20, and it went to 50... turned into something big... quick. It was fun, though. I got to see a bunch of my friends, even from high school.

Did you dress up?

Yeah, I dressed up as kind of like a mobster/gangster from back in the day. I wore suspenders and a leather hat...kind of like a classier mobster, but whatever.

What's the geekiest thing you've seen at Mines?

The most stereotypical geeky thing I've seen would probably be all the Halo and World of Warcraft in the dorms. I've never understood that game. I refuse to play it. I know one thing my friends have done before: we kind of impersonate our professors, not in a mean way, but just in a funny way. I guess that's kind of geeky.

What's the geekiest joke you've heard here?

I just saw it the other day. Somebody in my class wrote the mathematical proof for why girls are evil. It's pretty absurd. I was like, oh man, we should stop putting in terms of math.

What's the riskiest thing you've done?

Besides driving really fast in traffic with my friends and racing on highways, in high school, we used to play hockey at night. The park would turn the lights off at night. I think that's the riskiest thing I've done. Playing hockey at night in the dark without any gear.

If you could solve a problem, what would it be?

I'm kind of a biochemical/biomedical guy. So, I definitely wouldn't mind applying stem cells to cure diseases. Things like Alzheimer's.

How would you describe a typical girl at Mines?

What I've noticed is that, compared to the guys, the girls are a lot more motivated. They like to keep themselves busy. They'll take 18 credit hours, run two clubs, do a sport... I don't know how they do it. I also don't think they're as nerdy as the guys here.

Are you involved in any clubs?

I'm social chair in AIChE, the chemical engineering group. I also do open mic nights at coffee shops and stuff.

Do you have a girlfriend?

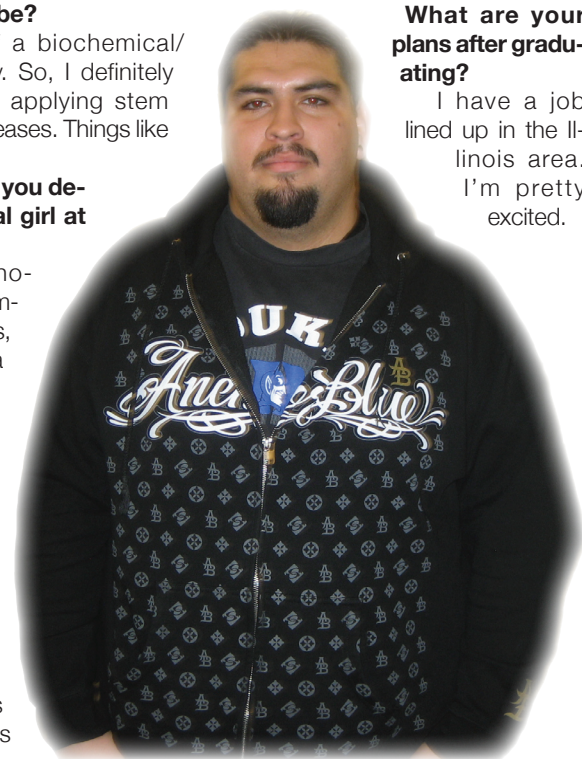
Yeah, met her last year. She's also a Chem E. So, it's kind of weird having classes with her. My friends always make fun of us for not sitting together, but my friends and I are the louder group. So, we like to sit in the back of the class. She likes to be left alone when she's in class.

Do you ski or snowboard?

I've actually only been twice, but it was a lot of fun. I would do it again.

What are your plans after graduating?

I have a job lined up in the Illinois area. I'm pretty excited.



NEELHA MUDIGONDA / OREDIGGER

Music Reviews

The '59 Sound. The Gaslight Anthem

Tim Weilert
Content Manager

Background
Living in 2008 is a little odd. From this point in history we can look back on centuries of progress and identify trends. Enter the Gaslight Anthem, a New Jersey band that has taken the best parts of their home state's music scene and created something great. Combining the Jersey punk scene and the musical styling of Bruce Springsteen, the Gaslight Anthem created a new subgenre, "Springsteen-punk." Currently, this group is on tour with Rise Against, Alkaline Trio, and Thrice.

Best Song:
The catchiest tunes on the record are definitely "The '59 Sound," "Old White Lincoln," and "Miles Davis & the Cool." These songs are reminiscent of better days, good times, classic sounds, cars, and musicians. As far as musical sound is concerned, the Gaslight Anthem has found a mix of upbeat guitars and drums that compliment their reverb-laden vocals. These tracks are probably the best representation of the group's unique sound.

Song To Skip:
It is hard to pick a low point for this album. The entire record has a certain ebb and flow, with a few slower songs thrown in to the mix. One song that let me down was "Here's Looking at You, Kid." Slow

and steady guitars start the song and continue throughout the song. Although this is not bad, there were several places where this song could break through into a moving anthem, but instead maintains a low-key sound until the end.

Final Thoughts:
The Gaslight Anthem is a proud band. Their signature style pervades almost every track on *The '59 Sound*, and their reflections on relationships and times gone by evoke a positive response from the listener. However, do not listen if you are more interested in musical diversity. Almost every song sounds similar, which is not necessarily bad when the album as a whole is catchy and fresh.

Rating (out of 5)



Anorak. Ruth

Benjamin Johnson
Staff Writer

Background:
Ruth was started by Dustin Ruth, who searched from Los Angeles to Portland to find quality musicians to join him in starting a band. In 2004, Ruth released its first independent record *Inside Out* followed by an independently released EP two years later. Tooth and Nail Records signed the band in 2007 and Ruth responded by releasing *Secondhand Dreaming*. Their most recent album, *Anorak*, released October 28, 2008.

"Anorak," a British slang word that refers to someone who rambles about a confounding interest, perfectly describes the album. *Anorak* often seems aimless and often very mystifying. Ruth's style is comparable to Relient K and Switchfoot, however they lack enthusiasm; the eleven songs blend together forming a bland record. On the upside, it is a relaxing listen that combines Ruth's pleasant, soothing voice with a slow, acoustic sound.

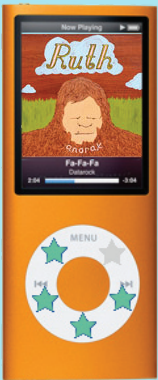
Best Song:
The best song on the album is "Nothing to Hide." Lyrics set this track apart because its style and overall composition are almost identical to almost every other track on the album. The song explores what it means to truly love someone and also what it means to be truly loved in return. "I gave you my heart and I made up my mind/And I'm longing to love someone/Just to love someone right/I want to love you like no one else has/I want to give you what no one else can." It has a nice, airy, high-school crush, carefree feel that fits perfectly with

the lyrics, which consider the selflessness of love.

Song To Skip:
"Miracle Photo" is a track that does not fit well on the album and is directly after the best track, which somehow makes it seem worse. Ruth sings while a guitar plays lightly in the background and the song lacks drums. This track is short, serves as a distraction, noticeably changes the mood set by the other songs, and is not worth a listen.

Final Thoughts:
Anorak has a nice feel, but none of the tracks jump out immediately. This album can be downright boring if you are in the mood for some pump-you-up type music. Ruth's voice is a perfect fit for this style of music, however. He made the best out of the often-forgettable acoustic genre.

Rating (out of 5)



The life and works of Michael Crichton

Stephen Bartels
Staff Writer

Dr. Michael Crichton passed away on the night of November 4 in Los Angeles at the age of 66. He trained as a medical doctor at Harvard Medical School, directed several movies based on his books, and wrote one of the most successful television series of all time, ER. However, he was better known as a novelist. He wrote fifteen novels including *Andromeda Strain*, *Jurassic Park*, *Timeline*, *State of Fear*, and *Next*, collectively selling over 150 million copies. He explored every scientific area from psychiatry (in *Terminal Man*) to deep sea exploration and time travel (in *Sphere*). He also wrote nonfiction and many scientific journal articles. His last novel will be released in May of 2009.

Jurassic Park (1990)
In this extremely detailed book, Crichton explored everything on an island where technology and its creations have gone wild. Power goes out, characters are stuck with wild dinosaurs in powerless cars, and dinosaurs escape on a boat to the mainland.

Through the use of the vicious

Tyrannosaurus Rex, sickeningly quick Velociraptors, and small, seemingly harmless Procompsognathus (compys), Crichton tells a heart-pounding story with scientific ideas that will glue anyone to the book until it's done and compel them to read the sequel, *Lost World*.

State of Fear (2004)
Global Warming: fact or terrorists? This book explores the idea of global warming and its implications, both real and imagined. John Kenner, a lawyer, foils several

terrorist plots to make global warming appear to be happening. Strangely, these events happen around the time of a convention hosted by the National Environmental Resource Fund (NERF). The convention, put on by Kenner's associate, Nicholas Drake, is meant to convince the world that it is going to boil.

Now, this sounds like a fairy tale with no grounds, just entertainment. However, Crichton included a 20 page bibliography, footnotes, and graphs throughout the book to back up his findings. He proposed the idea that the government uses global warming to maintain a "state of fear" to

keep the public under control. So, the question is, "Is global warming fact or just the government's control device?"

Next (2006)
In his latest book, *Next*, Michael Crichton addressed the controversial issue of genetic engineering.

Crichton set *Next* in the present; however, he added a scientific advance on genetics to the mix. Private companies own 20% of the human genome, resulting in an unfair system for those seeking genetic tests. People try to stop the private industries, primarily by filing lawsuits, but are never really successful.

Throughout the complex plot and subplots, characters fight to right the injustices of the genetics industry. By evading bounty hunters, suing unethical companies, and sabotaging genetic tests, they come closer to their goal. Crichton set the scene of the genetically altered world by involving several intelligent animals in the heat of the plot, including a half-human chimpanzee and an African Grey parrot.

This book has it all: action, romance, science, controversy, suspense, and last, but not least, a slight hint of what may be almost inevitable. The plot enraptures the reader in this roller coaster ride of a novel with its many twists and turns.

Beer Review New Belgium Brewery Trippel Ale

Akira Rattenbury
Staff Writer

Ever thought if you spent just two bucks more you could be enjoying a savory and delectable beer instead of a warm Coors Light? Ever imagined what Belgian style malting, flavoring, and yeasting entailed?

If you ask yourself these questions, the time is ripe for you to enjoy a flavorful ante straight from sustainable New Belgium Brewery in Fort Collins, CO: the Trippel Ale.

The brew infuses fruity banana flavors and odors with a malty blend of brew-tastic excellence. A true award winner, the Trippel-style comes from a part of the brewing process, which uses three times the malt of a regular Trappist-style beer. The bright yellow-orange color matches the thick lacing, good alcohol content, and ample carbonation which help pack the Trippel's punch.

The aromatics of this beer are outstanding. Fruity banana, pear or whatever tropical-ish fruit you can think of is probably there. The banana is probably all that is really there, however, and the spices make this Trippel exceptional. Cloves, pepper, and an ample dose of sweet sugar make for a scrumptious mouth finish. In total, the sweet banana-esque balance of sweetness and savory hops make this beer's smell excruciatingly enjoyable.

The taste is great too, better than a cold glass of lemonade on a hot day. Rather, better than a glass of nothing after a tough test and miserable day waiting for the snow

to pound the mountains. The Trippel delivers a refreshing aftertaste at a cheap cost (\$8 a six pack) and gives a slightly hoppy bite with the requisite flavor you expect from a good craft brew.

"Me Gusto," commented drinker Mickey O'Hara. "It reminds me of my childhood in the Belgian hills." While this statement is a gross exaggeration for the Steamboat native, the bold flavor and smoothness make this treat as good as any beer tested. Not a slammer to guzzle by the six-pack, but rather a quencher to savor and enjoy nursed in a cold glass. Watch the lacing and amazing taste as you enjoy Belgian imitation at its peak and please, do not chug.

Before I sign off, I'd like to give some notables about the makers of this fine strong ale.

New Belgium Brewery (NBB) formerly boasted a 100% renewable wind energy portfolio, which has given way to a more reliably realistic energy portfolio diversified in photovoltaic, renewable energy credits, and up-cycled methane burning technologies. Banking on the trendy push for sustainability, the employee-owned brewery has adopted multiple energy saving and environmentally friendly practices thrusting the company into the craft beer limelight as an eco-conscious imbibing option.

The company recently built a green packaging facility, which utilizes energy efficient heating and ventila-

tion technology, which reduces the brewery's overall carbon footprint. Here's a sincere beer to NBB and Jim Spencer, the lead engineer and CSM alum responsible for the advances. Innovative ventilation keeps energy flow low to the ground where the grunts push the product around and reduces wasted heat and energy, which would cool or heat the expansive ceiling space within the facility. This no-brainer modernization is only a small component of the almost LEED certified building. The plant also employs minimalistic panting, reuse of recycled granite, and pine-beetle killed lumber to make the modern and sophisticated building an attractive and trendy addition.



AKIRA RATTENBURY / OREDIGGER

Bond line-up

Erin Stephens
Staff Writer

With the release of the newest James Bond movie, *Quantum of Solace*, many 007 fans are wondering just how the new Bond, Daniel Craig, compares to the old classics. *Quantum of Solace* is the first true sequel to any James Bond film, and is only Craig's second role as 007. When Craig first appeared in *Casino Royale*, many fans were skeptical about the possibility of a blonde James Bond who had a decidedly different style than others. They asked the question of whether Craig's unique appearance and style were enough for him to join the ranks of classic Bonds such as Sean Connery, Roger Moore, and Pierce Brosnan.

Every Bond movie is characterized by some combination of car, train, plane, underwater, and boat chases. Craig has proved a master of the car chase, despite branching out from the standard Aston Martin found in many Bond movies. Even with his skill behind the wheel, Craig has not had the same experience with the train chases as some other Bonds. In *GoldenEye*, Brosnan got to smash up an oncoming train with a tank. Maybe in the next movie, Craig will be able to step onboard with the train chases. Bond fans may find Craig's lack of train experience is made up for with the latest plane chase in *Quantum of Solace*.

As every 007 fan knows, no chase scene is complete without bullets flying everywhere, and in this vein, each of the Bonds is known for carrying their gun a different way. Connery had a style similar to a western gun fighter, while Moore simply carried his gun at the ready. Craig has a new style, not in terms of how he holds the gun, but in how he uses it. In *Quantum of Solace*, he shoots people only after exchanging physical blows. Craig is a much better hand-to-hand fighter than any of the other Bonds, moving him into the twenty-first century spy stereotype.

Casino Royale and *Quantum*

of Solace seem to have lost the humor found in the older Bond movies. Brosnan was the king of saying stupid puns after killing an enemy, closely followed by Connery and Moore. Craig lacks the same humor factor that made the other Bonds interesting. Craig's "He was a dead end" (after wrestling and stabbing a man) lacks the same wit as Moore's "He got carried away," after strapping a man to a rocket. It seems as though Craig's version of 007 is a much deeper and emotional character than any of the previous, sassy Bonds.

Not only are the jokes becoming more and more serious, but the Bond girls are becoming deeper and deeper. With the new Bond girls, Vesper and Camille, Bond seems to be becoming more emotionally attached to the girls. Alternatively, Brosnan and Connery just moved from one girl to the next without any complaints. In a similar tract, Craig is lacking in the finesse that characterized the others. He does not have the same Jedi mind power over women. Although, the new Bond girls names seem to be keeping time with the old: Strawberry Fields is the newest addition to the often whimsically-named Bond girls.

Bond's villains seem to be coming a long way from the sixties, when Blofeld tries to take over the world by hypnotizing women to fall in love with chickens. In Craig's movies, the villains stick to problems relevant to society today such as the oil crisis. With the end of the Cold War occurring in the Bond Universe, new villains must be found. The hidden organization of *Quantum* might just do the trick.

Even with the skillful transition from the Russian-American stand-off to the new era, Bond just isn't the same without Q. The gadgets have taken a dreadful hit without the quirky MI6 technician.

Although there are certainly flaws present in Craig's performance, he more than makes up for these with his differing take on the character. Overall, this blonde Bond is certainly on par with the classic 007s.

Quantum of Solace

Benjamin M. Weilert
Staff Writer

Ever since the turn of the millennium, many film franchises have taken to starting over; reinventing themselves for this modern era. From superheroes like Batman and Superman to age old classics such as *Rocky* and *Rambo*, these franchises have been going back to the drawing board to pull in ticket sales. The James Bond series is no different. In 2006, Daniel Craig was added to the ranks of actors who have portrayed James Bond, including Sean Connery, Roger Moore and Pierce Brosnan.

Quantum of Solace is a rather rare Bond film as it actually has a connection to its predecessor, *Casino Royale*. Since the death of his lover in the last film, Bond has taken to seeking out the people responsible for her death. Unfortunately, this leads to some tension at MI-6, where M (Judi Dench) feels that Bond's revenge is getting in the way of his duty as an agent.

Following some leads, James ends up in Haiti where he meets Camille (Olga Kurylenko), who is trying to use Dominic Greene (Mathieu Amalric) for her own revenge against the soon to be dictator, General Medrano (Joaquin Cosio). As it turns out, Greene is in cahoots with many government officials, including American CIA agents. Everyone wants to be on Greene's good side because he controls a valuable natural resource.

With MI-6 trying to bring Bond in for killings he was framed for, James continues his pursuit of Greene, eventually finding the natural resource that Greene is controlling. Bond tracks Greene to a desert hotel, where he and Camille fight with their respective en-

emies in a hydrogen fuel cell fueled inferno. A debriefing in Russia puts a nice cap on everything as James Bond walks away from M in the snowy evening.

Marked as the 22 Bond film, *Quantum of Solace* has all of the elements of the franchise. There are the spectacular opening credits, Bond girls, fancy car chases and gun fights. Missing from the mix is the legendary set of gadgets, which was also missing from *Casino Royale*. Instead, an impressive graphical user interface on all the computers and cell phones (think *Minority Report*) replaces the somewhat obscure and specific gadgets.

The film feels like an action film from the *Bourne* series, with vehicle chases and somewhat jittery camerawork that becomes hard to watch at times. *Quantum of Solace* starts with a car chase and uses any available vehicle to drive the action, including a motorcycle, boats, and airplanes. However, the action kind of lulls in the second third which drags the movie to-

wards the final, fiery fight.

Daniel Craig has been hailed as the Bond closest to the literary image created by Ian Fleming. Craig takes the character and gives Bond depth and complexity to match his martini. The villain is real enough, but feels like a bitter Al Gore who is using global warming to scare people into giving him control over everything. With a set of unknown actors (with the exception of Judi Dench, and now Daniel Craig), the Bond franchise is starting over from the string of Pierce Brosnan films, which tended towards celebrity and over-the-top silliness.

Fueled by action sequences and lightened by British wit and charm, this film should be enjoyable to both those wanting to become familiar with the Bond films and those diehard fans. It's definitely worth the price of admission. *Quantum of Solace* is 1 hour, 46 minutes long and rated PG-13 for intense sequences of violence and action, along with some sexual content.



LILY GIDDINGS / OREDIGGER

MUST SEE MOVIES

War camps

Benjamin M. Weilert, Staff Writer

There are times at this school that it may feel like you're in a war camp. Poor food, cramped quarters, unsanitary conditions, and that's just the dorms. Well, it may be encouraging to know that many people have escaped Mines, either by graduation or transfer. Just know that however bad it may be, others have had it worse and also managed to escape (although some of them were caught again). This week's Must See Movies feature films about war camps and the people who escaped them.

1. The Great Escape (1963)

Perhaps the most famous prisoner-of-war escape ever executed, *The Great Escape* tells the story of an American captain (Steve McQueen) and a group of British soldiers who manage to make their way out of a camp that the Germans believed was "Escape proof." Through some intense planning and teamwork, the imprisoned soldiers cleverly hide the fact that they're digging a tunnel to escape. By the time that their Nazi captors find the tunnel, over 50 soldiers have made their way outside of the camp and are on their way to freedom. Unfortunately, most of them are captured again and brought back to the camp, or are killed in the chase. Based on a true story, *The Great Escape* is a film that is referenced often, including the clay animated movie, *Chicken Run* (2000).

2. The Bridge on the River Kwai (1957)

In most instances of prisoner-of-war camps, there is no cooperation. However, in *The Bridge on the River Kwai*, a British colonel (Alec Guinness) settles his differences with the Japanese commander in order to build a railway bridge. Up till this point, the bridge was not progressing due to its location and poor design. When the colonel organizes his forces, they manage to build a spectacular bridge which, unbeknownst to them, is now the target for an allied forces attack. This film is superb not only from the perspective of a movie lover, but from the perspective of an engineer. *The Bridge on the River Kwai* won the Best Picture Oscar and holds a high spot on the American Film Institute's top 100.

3. Schindler's List (1993)

When people think of war camps, they undoubtedly turn to images of the holocaust. Shot in black and white, this film has a power and a presence to it that brings forth all the emotions from this dark hour in the history of the world. *Schindler's List* exposes the work of an Austrian industrialist, Oskar Schindler (Liam Neeson), who saved over 1,000 Jews from being killed. By making the Polish Jews workers in his factory, he could simultaneously save lives and hinder the Nazi's conquest of Europe. Placed within the top 10 of AFI's top 100 movies, *Schindler's List* also won Steven Spielberg an Oscar for Best Director and Best Picture.

For Homework – See *Chicken Run* (2000)

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Women's soccer scores some serious goals

Keegan Hammond
Staff Writer

The 2008 women's Oredigger Soccer team secured their first National Collegiate Athletic Association (NCAA) Tournament invitation in the program's history on November 10. That alone would give them plenty to cheer about, yet, in addition to that historical statistic, they are also fifth seed in the division.

Looking back at this amazing season, you should know that honors were being netted in pre-season play before most of us were even in class. On August 19, Junior Kayla Mitchell earned the All-RMAC (Rocky Mountain Athletic Conference) preseason honors. What a way to start off the season for a program that is only four years old. Then, on September 16, the team earned the fifth seed in the Central Soccer Region as Sophomore Briana Schulze was named the RMAC Defensive Player of the Week. At the end of September, the national poll was released and the Women's Soccer team was informed that they had moved up to the fourth seed in the Central Region. All of this happened while Mitchell was again named the RMAC Offensive Player of the Week. However, fourth was not good enough for the team. One week later, it was announced that their hard work had paid off, and they were tied for the first seed in the RMAC Conference. Goals and honors kept racking up as Schulze nabbed the RMAC Defensive Player of the Week nod one more time.

Thus far in this season, as with other Mines athletic teams, the women have definitely proven that they are more than capable of high academic goals as well as playing soccer. Proof was shown on October 15 when six players earned Academic All-RMAC awards. To qualify for Academic All-RMAC recognition, student-athletes must have a cumulative GPA of 3.20 or

One week later, it was announced that their hard work had paid off, and they were tied for the first seed in the RMAC Conference.

better, something that many of us at Mines would be very pleased to put on our resumes. These women also must be a starter or key reserve and have completed a minimum of two consecutive semesters at Mines. Andrea Johnson (Physics), Corinne Johnson (Electrical Engineering), and Diane Wetzel (Geological Engineering) all had 4.0 GPAs. No, that is not a typo. A 4.0 in addition to soccer. Kayla Mitchell (Civil Engineering), Jessica Stark (Mechanical Engineering), and Keri Kuhn (Engineering Physics) rounded out the list. Way to "goal" ladies!

Those accomplishments could wear out any student, but wait, it gets better. On October 28, Kelsey Lang and Mitchell earned both the Offensive and Defensive Players of the Week. After their final regular season game on November 2, the squad moved up to third in the NCAA Division Central Region. Is there anything these women can

not do? Your Orediggers women's soccer team had five members named to All-RMAC teams. Mitchell and Elizabeth Oba were named to the First team, and Lang, Schulze and Wetzel were named to the third team. To round out the season, Mitchell was named to Daktronics' First Team All-Central Region on November 11. Her teammate, Corinne Johnson, earned Second Team honors.

Head Coach Frank Kohlenstein is obviously proud of his team, and commented that, "They really did a great job. I'm really proud of what they've accomplished." Anyone would agree with Coach Kohlenstein that this is an incredible record, especially since he only has four seniors. It's the women's work ethic got them into the NCAA tournament. Kohlenstein says that "They worked very hard in the off-season to get better; they get along well and support each other on and off the field. Finally, whenever we found something that we weren't doing well, they did it better. They respond well to improve and make the team better." When looking for an individual who was the standout for the season, Kohlenstein couldn't pinpoint just one, instead he commented that "The four seniors have been with the program for four years and have a lot invested in the program. They've seen us suffer through some bad losses and joyous wins. They knew what was going on and really stepped up.

Also, Kayla Mitchell has 22 goals to this point and Liz Oba played in the last RMAC game with a separated shoulder." That shows some dedication.

The team's dedication also shows during the off-season. The women "Work hard in the off-season to make themselves better. Because of our facility situation, I ask them to get up at 6:30 AM to work on personal skill work, not always the most exciting, but it makes you better" is what Kohlenstein said about how the team improves. As for what the team needs to work on, Coach Kohlenstein said, "Soccer is a sport where you can always get better. Your mistakes allow others to score and theirs allow you to score. You can always improve technical ability and that would make us considerably better. However, from the first year to now, we've done well." We're anxious for the results as the

No, that is not a typo.

A 4.0 in addition to soccer.

women kick it up in their first NCAA tournament.

Mines also has a men's soccer team that has been playing as well this season. While their record wasn't quite as deeply entrenched in wins as the ladies, it was full of accomplishments nonetheless. Senior Jason Decker started out the season earning pre-season All-RMAC accolades. Cameron Brown (Mining Engineering), Kenan Bisic (Chemical and Biochemical Engineering), Trevor Braun (Chemical Engineer-

ing), John Moseley (Business and Economics), Jeff Nelson (Geological Engineering), Drew Werth (Metallurgical and Material Engineering),

Nic Amedo (Mechanical Engineering), Chris Bostic (Mechanical Engineering),

and Denver Williams (Chemical Engineering) all earned Academic All-RMAC honors. Blaskovich, Huber, and Thompson then also earned spots on the RMAC Men's Soccer ALL-Time Team. Moseley was then named First Team while Jason Decker, Ted Decker and Brown added accolades as Second Team members. To top it all off, Nelson, Brown, and Ted Decker earned Daktronics All-Central Region praise.

The men's Head Coach, also Frank Kohlenstein, was asked what the main aspect for the game's future work should entail. He replied that, "I'm still proud of the guy's team. They had a lot of distractions and injuries, sort of potholes, walls, and barriers that they had to overcome. They qualified for the 9 year in a row for the conference tournament as the third seed. No other program has gone [to a conference tournament] that many times in succession. They need to get better and a lot of it has to do with the technical aspects, the young players need to have a hard working attitude and work hard over the summer."

Congratulations to both teams on outstanding seasons. Cheers and here's to your goals!

ORC slides out winter plans

Spencer Nelson
Staff Writer

The Outdoor Recreation Center has been a resource for students to rent gear, go on trips, compete in competitions, and learn outdoor skills. As students around campus study for finals, the ORC is busy planning for the winter season.

The ORC, located by the climbing boulder on the west side of the Student Recreation Center, is excitedly preparing their rental gear. According to Rob Thompson, the ORC director, winter rentals include poles, snowshoes, ice axes, ice tools, crampons, and avalanche gear. "We rent a lot of snowshoes every weekend," said Thompson, "Sometimes we max out on our snowshoes." For those worried that they will be unable to rent mountain bikes or tents, fear not. "We rent everything we rent all year long," assured Thompson.

Mines students are encouraged to take advantage of the opportunities offered by the ORC. Since they are school-funded, the ORC often rents equipment at a loss simply for the benefit of the students. "All of our trips are priced to be very accommodating for students. All of our rentals, our services, everything is priced for students," said Thompson.

Trips are a large part of what the ORC offers to CSM students. "We're putting together some really sweet hut trips," said Thompson. "Basically, you stay at this hut at night... and you have three days to backcountry ski and ride." Two such trips are being planned out right now: one before school starts in January near Vail Pass, and another at the beginning of Spring Break near Leadville. Other trips are in the

works and will be announced soon.

The annual gear sale is also generating a large amount of excitement this year. Thompson excitedly described their plans: "We've done a gear sale for the last 5 to 10 years. This year we're working with the city of Golden to make it huge. Not only are we selling some of our stuff, and students and staff can bring in their stuff... we're trying to make it open to the whole community so anyone from the community can come to the gear sale and sell their stuff and [we are] therefore hoping to have a lot more people and a lot more stuff to sell."

This plan to incorporate the community is going to be a benefit to the students and citizens of Golden. "Additionally, we're looking to have the local shops have... a booth set up. So if Bent Gate is turning over their skis because it's the end of ski season, they can come down and sell their stuff at discounted rates for that day." The plan is to have the gear sale sometime around March.

Information about the ORC can be found on their website, www.csmrecsports.com/morc.



SPENCER NELSON / OREDIGGER

New direction for Nuggets

Matthew Pusard
Content Manager

For six consecutive seasons, Chauncey Billups led the Detroit Pistons to the Eastern Conference Finals. Now, he's bringing his knack for winning back home.

Billups, a native of Denver who played at George Washington High School and the University of Colorado, came back to Colorado from Detroit in exchange for Allen Iverson. Iverson, who came to Denver in 2006, is third in NBA history in scoring average, but was redundant on a team with Carmelo Anthony present. The trade gave coach George Karl the point guard he desired ever since the Nuggets traded away Andre Miller for Iverson.

Billups' homecoming has noticeably changed the direction of the season for the Nuggets. The team was 1-3 before the trade was completed and has since gone on a 4-1 streak. This includes a 94-85 win on Friday night against the reigning NBA champions, the Boston Celtics, in Boston. In those games, Billups averaged 18.2 points, 6.2 assists, and 2.0 steals.

The early season acquisition of Billups was the last in a series of moves that shook the

Nuggets up. The team sent defensive stalwart Marcus Camby to the Los Angeles Clippers to free up cap space, a risky move, considering the team was defensively-challenged as it was. The team also lost gritty defensive forward Eduardo Najera to free agency.

In their stead, the Nuggets brought in former player Chris Anderson, a potent shot blocker in his own right who lost 2 NBA seasons due to an illicit drug-related suspension. The team moved Nene, now recovered from his bout with testicular cancer, to starting center, allowing him to average career highs in rebounds and blocks thus far in the season.

In spite of all the shakeup at center, the team has noticeably improved their defense with Billups. The Nuggets have allowed just 98.4 points per game, significantly down from 107 per game last season. Allowing a few points is nothing new for a Billups-led

team. Last season, Detroit led the league in fewest points allowed per game with 90.1.

But Billups is not solely responsible for this change. Carmelo Anthony is rebounding more and more, becoming the team's second-leading rebounder behind Nene. Anthony has never been known for doing much other than scoring, but the Nuggets needed him to step up without Camby, the 2006/2007 Defensive Player of the Year, to pick up the slack.

The self-proclaimed "King of Park Hill," according to one of Billups' tattoos, is in his second stint with the Nuggets. He played for the team from 1998 to 2000 before signing in Detroit as a free agent, blossoming into a NBA Finals MVP. Upon his return to Denver, and seeing his usual numbers of "4" and "1" already taken, Billups decided to take the number "7" in honor of his football hero, John Elway.

The homecoming of Billups has gone very well so far, but the team has to keep up the pace. The Nuggets are only one game behind the Utah Jazz in the division after Friday's game. But Billups is committed to getting the team not just past the Jazz, but the entire league. As Billups said to the home crowd over a microphone right before his first game back in Denver, "I'm fully committed to trying to lead this team to a championship caliber."



ZACHARY BOERNER / OREDIGGER

Principally Irked

War over marriage exemplifies American tradition

Andrew Aschenbrenner
Opinion Columnist

What is the true definition of marriage? How should the United States government recognize relationships? Is same-sex marriage a question of equality? These questions represent the forefront of the newest civil rights battle in American politics. Three state constitutional bans on same-sex marriage passed on Election Day, and voters in a fourth state passed an initiative banning adoption by unmarried couples.

The fights over all four of those ballot measures represented new clashes in a 40-year culture war over the rights of this nation's gay/lesbian/bisexual/transsexual citizens. By all accounts, the fight started June 28, 1969, at the Stonewall Inn in Greenwich Village, New York City. A police raid ignited riots and protests, and tensions over anti-gay discrimination fed the start of the modern gay rights movement.

The progress that has occurred since that date is remarkable compared with other struggles for civil rights that preceded it. Significant examples of advances in gay rights since 1969 include the removal of homosexuality as a disorder by the American Psychiatric Association in 1973 and the 2003 U.S. Supreme Court ruling *Lawrence v. Texas*, which declared laws prohibiting consensual sodomy unconstitutional.

Today, the main front of the gay rights movement that receives the most attention is the battle over marriage recognition for same-sex couples. The debate on marriage is fiercely divided, but there is one solid argument, and that is to establish and maintain equal recognition in the eyes of the law.

There are some that hold the viewpoint that the word "marriage" is not important and that all that matters is equal rights. This is a

flawed view, because the fight for the right to have the relationships of same-sex couples legally recognized is not about equal rights. It is about equal treatment under the law. When our government regulates the legal treatment of citizens based on their status as human beings, it is espousing a position akin to racial purism.

Politics, philosophy, and policy are shaped by one's belief in the role of government. I believe that a central government is a manager, a "national coordinator" of resources and interests.

The United States of America exists today only because we continue to have a strong founding document and because we have allowed courts the ability to interpret that document based on the principles laid out in it. The courts may not always be independent, and they can continuously redefine what passages and clauses mean in law, but judicial precedent is still important and the original language of the Constitution has never changed.

Courts certainly aren't infallible, but they have an indispensable role. What the courts do is reconsider decisions according to popular views. There was once a time where it was declared that no slave nor descendant of a slave could ever be a U.S. citizen. And as late as 1967, it was illegal for a black person to marry someone of a different race in sixteen states. The parents of our next president were not able to marry in almost a third of the country which he will lead.

The unanimous 1967 Supreme Court decision *Loving v. Virginia* reversed an 1883 decision that declared that interracial marriage bans did not violate the fourteenth amendment. In striking down laws prohibiting interracial marriage, the Court stated that "Under our Constitution, the freedom to marry, or not to marry, a person ... resides with the

individual and cannot be infringed by the State."

Arguments rage over religious persecution and the "redefinition" of marriage, but I find the thinking behind them confusing and misguided. As previously stated, this fight is about our government's treatment of its citizens, and is disconnected from religion. To those who say that marriage is a religious institution, consider this: marriage is a term that defines a union of two individuals, however, that union is classified. The true meaning of marriage is up to the married.

For those of you who say that legal recognition of same-sex marriages would mean the redefinition of marriage, you are correct. We would be redefining marriage in the public eye, just as we did when we established that two persons of different races had the right to get married. We would be redefining marriage, just as we did when society at large decided that it was no longer an exchange in property, but a spiritual bond.

Currently, I do not have the right to marry any person of my choice in this state, and neither do you. We as citizens are told whom we can love and form a bond with in the eyes of our peers. This is wrong. Even when states provide civil marriage to same-sex couples, our federal government doesn't recognize them as married. It's a cold thing to consider.

Coordinated mass protests in cities around the country this past Saturday gave a strong signal that the fight over recognition of same-sex marriage rights is far from over. I have no illusions. Personal decisions over whether or not same-sex marriage is right are not taken lightly, and they are not always easy to make, but I have the utmost confidence that marriage equality will eventually be a reality in this country.

Minds at Mines

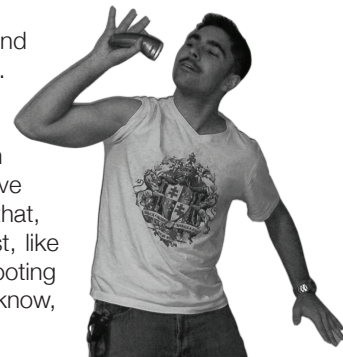
Free Time

Roby Brost
Staff Writer

Here at Colorado School of Mines, more than an excellent education unites students. If you take a moment to wander around campus, you will find students involved in a search. The object of this search: The elusive species of time known as "Free time." Also known as "Time where there will be no homework doing," "Time when I am sleeping" or most commonly, "Meal time." This shy species is high in demand, and very difficult to find here at Mines. In fact, many student here have not found free time in such a long while that they consider it extinct, questioning its very existence on campus. Nonetheless, the vast majority of students here seek it out with fervor. Sometimes, they find it. Even brief snatches of free time are considered a valuable resource. So just what is it that students do in their free time?

"For fun, I grow out my facial hair and shave it into all sorts of different styles. My girlfriend is kind of iffy about the whole "No shave November" thing, so I have to play this strategic game of when I'm seeing my girlfriend and when I have facial hair... that's fun too. Other than that, something that I usually do after a test, like the Statics exam, is to de-stress by shooting people. Because that's a lot of fun; you know, Call of Duty IV."

Adam Richmond



"I play piano and fold origami. Occasionally, I hike up to the top of South Table. I run, I rock climb, I participate in SAC fencing, and watch movies. Go to free pour. Some of these things are just things that I enjoy doing... Others, like going rock climbing, or running, that's when I feel the need to de-stress. Sometimes, it's just nice to spend [time] in the Slate, to talk to friends and do nothing but enjoy other people's company."

Ben Schwyn

"What I do for fun in my free time... Occasionally I like to put all of my thoughts down on paper and make them into something where they are not about an engineering student struggling to get by at a very difficult school."

Duncan Mower



"In my free time I like going on random driving adventures with my friend Mataya. It gives us something to do that doesn't necessarily involve school work, but at the same time, it can be productive."

Lauren DeBow

"Most of my free and fun time is spent playing softball. Besides that? I enjoy all sorts of things, like building castles out of Playdoh, reading up on NASA stuff, and catching the latest Antique Roadshow. Free time is a precious commodity, and I always savor it when I find it."

Rachel Meine



"We play five big ones. (A shooting game.)"

Mines Varsity Girls Basketball



ALL PHOTOS ROBY BROST / OREDIGGER

Cultural Diversities

Georges M. Ngonyani
Staff Writer

If you grew up in a mono-language speech community, it may be hard for you to grasp the concept of language "*Falling sick and dying*." Being born in a multi-language speech community in Tanzania, I would like to share my experiences on how can a language get sick and eventually die. This evidence not only assesses the status of English language in Tanzania and how sick it is, but also looks at the Kiswahili language as the weapon for killing the tribal languages.

The current linguistic research reveals the existence of more than 120 tribal languages in Tanzania. However, some of these languages have a good percent of mutual-intelligibility. I don't intend to let you be able to name all these 120 languages, but let me mention Ngoni which is my mother tongue, as the representative of the other 119 languages. My main aim therefore is to let you understand the complexity of the linguistic situation in Tanzania and how it creates suffering and death for languages.

For quite a long time, Tanzanians used to acquire their mother-tongues before learning Kiswahili which had a

role of a lingua-franca. Kiswahili was not only used in primary schools as a medium of instructions, but also for official government business. This means that it became the second language to most Tanzanians. On the other hand, since Tanzania was a British colony until 1961, when it got its independence, English, having all the qualities of "Matter," had a space to occupy. It first acquired the primary official role, later came to operate in conjunction with Kiswahili. For example, while Kiswahili is now the medium of instruction in primary schools, English performs the same role in secondary schools, colleges, and universities.

How can a language get sick?; Most Tanzanians, by the time they begin learning English would already know two languages (Kiswahili and a tribal language with the former being more dominant). While the Kiswahili stress pattern accept stress to every syllable, I will judge English as an unpredictable stress pattern language as it sometimes accepts stress at the penultimate syllable and sometimes at the beginning of a word. Also, English has primary and secondary stress patterns. These differences have caused English *to suffer* on the pronunciation aspect as "we" Tanzanians would speak

it with the Kiswahili accent which I name it KISWANGGLISH/SWANGGLISH (*a swahilized English*). I have found no word to describe this situation other than "sickness." If you want proof, come and talk to me to find out how I make English sick.

Looking at how languages die, I will use the relationship between Kiswahili and the tribal languages. Kiswahili, which started as a lingua-franca and grew to a national language, has now acquired the native status to most Tanzanians under 20 years of age. This phenomenon was different by the time I was growing up. If someone asked me of my tribe, I used to say Ngoni, but today if you ask the same question to an under-20 Tanzanian, the answer will be "I am a Ngoni, but can't speak it. I know Kiswahili only." That is because he has become a "*De-jure Ngoni, de-facto Swahili*" (*Latin*). This situation predicts the complete death of these languages in a few years to come.

I conclude by saying that, even though Kiswahili unites Tanzanians, as a linguist, I stand on the reality that it has also been the agent of death for the tribal languages, and this is the proof that languages, similarly to *Homo-sapiens*, contract diseases and eventually die.

Fool's Gold

"Start a love train"



Be cautious of the pretty ones

The truth about GIRLs and the decreasing ratio

Spencer Nelson
Resident Female Expert

As upperclassmen saw the first of the incoming freshman class at the M-Climb, it was impossible not to notice the hordes of girls, a rare sight around the Mines campus. Whispers spread up and down the lines of water-balloon torturers of a freshman class composed of 30% girls. Although accurate on a surface level, this statistic is not entirely true. "It was such a beautiful sight," gushed Ryan Lisby, a junior Environmental Engineer. "I've never seen so many girls in real life! I thought there were only that many girls on TV!"

This female phenomenon started last spring with a senior design group. The five seniors, four of which were very single men, wanted to advance Mines socially, but were not sure how to go about doing so. One senior, a math major, crunched the numbers and realized their group of four guys and one girl accurately represented the four-to-one ratio exhibited at Mines. This epiphany was accompanied with the realization that they were terribly depressed, a symptom that can only be attributed to the extreme deficit of the feminine gender. They soon realized the only solution was to make more girls.

In a magnificent show of cooperation between the senior design group and the Robotics Club, the

solution to the gender ratio was soon on the assembly lines. Since girls have been scientifically proven to be scarce in numbers, the only way to bring more of them to Mines was to make them. The first prototype of the Gorgeous Intelligent Robotic Lady (GIRL) was tested around finals in December 2007. The GIRL was allowed to wander around the freshmen dorms for about a week. However, the results were mixed because most people thought "she" was a lost CU student, despite its intelligence.

"It was weird," recalled Jordan Flynt. "She was pretty, but she knew how to calculate the partial molar Gibbs energy of a multiphase system. I didn't know pretty girls could do that." After many small tweaks over the spring and summer, the project was put into full effect at the beginning of the fall semester. There are currently 167 GIRLs populating the freshman class of 2012. Interestingly, Thomas third floor is composed entirely of GIRLs.

For many guys, it is difficult to determine whether a girl is a GIRL or a girl. It is a difficult distinction since GIRLs comes in 17 different models and each can be individually modified for further diversity. There are three key distinguishing features that all GIRLs have in common. First, as is implied in the name, GIRLs are beautiful. This is the easiest way to

recognize a GIRL. This is actually considered a bit of a flaw by the original senior design team because the typical Mines guy is usually terribly intimidated by a GIRL.

The second feature of a GIRL is high grades. GIRLs have been programmed with excellent CAPA solving abilities and are good with homework help. This is usually a harder trait to identify because the average SAT scores of Mines girls is typically higher than the number of girls at the school.

The final GIRL trait is a personality. Since Mines girls typically have the social capacity of a rock, GIRLs were made to be friendly, polite, and easy to talk to as a change of pace.

Although GIRLs may seem perfect to many guys, don't be fooled. Beneath their perfect skin is a cold, heartless machine. Due to a recent virus developed by a very lonely computer science major, GIRLs will now date guys, but relationships can only last for a month. Relationships end in the GIRL draining the guy's bank account and then melting. Experts say male students should resist temptation to ask out intelligent, pretty "girls" that seem interested in them since they are most likely GIRLs. However, there is little concern of this happening since Mines men cannot utter more than "Uh... well... three... and beef" around GIRLs.

STANDARD DEVIATION

BY KYLE SANDERS



1		4	8	2	3			
5					4			
		6				3		
			4			6	2	
	2			5			3	
	4	9			7			
		8				2		
			3					7
			7	9	8	1		3

Puzzle by websudoku.com

solution

4	8	1	9	3	7	5	6	2
3	6	2	4	8	5	9	7	1
7	9	5	1	6	2	8	3	4
2	3	7	8	5	4	6	1	9
1	4	8	3	9	6	7	2	5
6	5	9	2	7	1	4	8	3
9	7	6	5	1	3	2	4	8
5	2	3	6	4	8	1	9	7
8	1	4	7	2	9	3	5	6

Puzzle by websudoku.com

Registrar successfully registers students

First instance of refreshing organization

Benjamin M. Weilert
Registered Republican

In the 134 years that the Colorado School of Mines has been in existence, students have registered for their next semester's classes through a complicated array of spreadsheets. In these 134 years, not once has every student received the schedule they wanted. That is, until this last week.

For the first time ever, all students at CSM obtained their ideal schedule for the spring 2009 semester. Not a single student had to come by and fill out paperwork due to a full class, time conflict, or faculty death. "This last week was so relaxing, I think we're going to implement this system again next semester," said office secretary, Reggie Strar.

The system that Mr. Strar spoke of is an elaborate flowchart/decision tree that decided where and when all the courses for next semester will be offered. "Usually we just have Eddie figure these things out, but I have to say that actually putting some forethought into this whole registration process really paid off." For years, Eddie, the registrar chicken, would choose locations and times for courses by pecking at corn that had been sprinkled on a keyboard.

Through assistance from the Computer Science department, data on each student was input into an enormous database. This data

included information for which classes have been passed, their preference for morning or afternoon courses, astrological sign and blood type. The data is then fit into the declared major of the student, and the ideal schedule is made. From this schedule, the registrar makes sure to have the right amount of spots open for the students.

Of course, a system that can accommodate the unique properties of all students on campus is bound to have some limitations. This is where the Physics department stepped in to help. In order to solve any course conflicts, the Physics department has opened up another 3 spatial dimensions so that students can take two classes at the same time, and in different places.

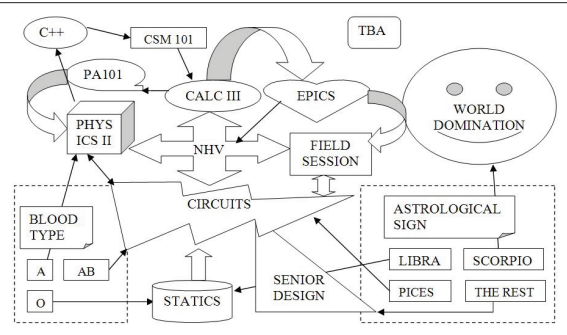
"With the discovery of 11 dimensions through string theory, we felt that we weren't utilizing the space we live in to the fullest," said Physics student, Izzie Cyst. The Physics department has been using these 3 extra spatial dimensions for years, which is the reason why Physics students may sometimes graduate in three and a half years, as

compared to the normal seven.

Most professors have been accommodating to the new registration, but others have been resistant. "If I'm on this campus for more than 2 hours a day, I turn into a crazy person," remarked "Advanced Theory on Basic Theoretical Theory" professor, Theo Ree.

Fortunately, the Robotics Club has offered a solution that will allow professors to do "research" instead of teaching classes. Appearing next semester, Teaching Bot Advanced (or TBA for short) will dole out information, homework and tests to students in an efficient and non-violent manner.

Through cooperation between departments and the bureaucracy of CSM, students will have a fulfilling and enjoyable educational experience for years to come. As for Eddie, the registrar chicken, the food court will now offer (for a limited time) a thanksgiving dinner upon special request.



New Flowchart. No longer will Eddie determine our fate.

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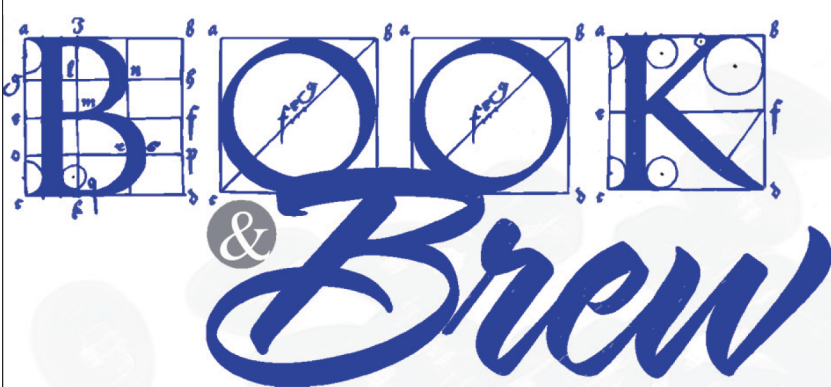
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